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POTENTIAL FOR IMPLEMENTING GREEN ECONOMY AND BLUE ECONOMY IN SUSTAINABLE GLOBAL ECONOMY DEVELOPMENT AT THE G20 FORUM WITH CIRCULAR ECONOMY AS NATIONAL ENVIRONMENTAL POLICY

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Abstract

This research aims to describe the potential for implementing the Green Economy and Blue Economy towards Sustainable Global Economic Development at the G20 Forum with Circular Economy as National Environmental Policy. This research is quantitative research using a survey method. The data collection method in this research, the researcher tries to find information related to this discussion in the form of facts, opinions and archival records. The data analysis technique in this research uses Partial Least Square (PLS). The research results of the first hypothesis were accepted that the Green Economy (X1) had an effect on the Circular Economy (Z). The second hypothesis is rejected that the Blue Economy (X2) has no effect on the Circular Economy (Z). The third hypothesis is accepted that the Green Economy (X1) influences the Global Economy (Y). The fourth hypothesis is accepted that the Blue Economy (X2) influences the Global Economy (Y).The fifth hypothesis is accepted that Circular Economy (Z) influences the Global Economy (Y).The sixth hypothesis is accepted that Green Economy (X1) has a significant effect on Global Economy (Y) through Circular Economy (Z). The seventh hypothesis is accepted. Blue Economy (X2) has a significant effect on Global Economy (Y) through Circular Economy (Z).

Keywords: ***Green Economy, Blue Economy, Global Economy and Circular Economy***

1. INTRODUCTION

Blue, Green, and Circular Economy has great potential and benefits for sustainable global economic development. Its implementation can create millions of new jobs, reduce waste from various sectors, and encourage economic growth. Environmental issues such as carbon pollution, marine and land degradation, and plastic waste drive the urgency of implementing a sustainable economic approach. "This approach combines the potential for economic growth with environmental protection and human inclusion to reap benefits in a more holistic concept," said Andreas Schaal, Director of Global Relations at the OECD and OECD Sherpa for the G7, G20 and APEC, and one of the four panelists present. at this event. There are still many challenges that must be resolved to implement this economic approach in a mature manner. "There are three challenges, namely the need to change attitudes and perspectives towards a more environmentally friendly economy, lack of financial support, and the absence of good incentives for implementing these concepts.

The concept of blue, green and circular economy is not a new concept. However, the world has only recently become aware of the importance of transforming the global economic approach so that it becomes sustainable. Indonesia itself has begun to implement these three economic approaches. The concepts of blue, green and circular economy have been implemented in Indonesia's Vision 2045 in priorities number 1 and 6. The blue economy has also been brought into discussions at the Development Working Group and the ASEAN agenda. The 2022 G20 Forum held in Indonesia focuses on collaboration to formulate breakthroughs and concrete actions that contribute to global economic recovery efforts. The 2022 G20 Presidential event which carries "Recover Together, Recover Stronger" captures 3 (three) main opportunities that are optimized, firstly the transition to a green economy which translates the transition from green energy or renewable energy, secondly the increasingly large digital economy trend, and thirdly, improvements to global architecture that are increasingly responsive in facing global challenges, especially pandemics. In order to encourage a

sustainable economy towards a green economy as the main opportunity for the G20 Presidency, the Indonesian Government has formulated sustainable investment which is a direction from the President to encourage economic transformation from primary sector industry to value-added (downstreaming) based industry. Downstreaming has depicted encouraging developments, where based on data it shows that from 2019 to 2021 the Basic Metal, Metal Goods, Non-Machinery and Equipment Industry sector increased 90.7% from IDR 61.6 Trillion to IDR 117.5 Trillion, which includes 13% of total investment. In March 2022 as part of the Road To G20, the Ministry of Investment/Investment Coordinating Board (BKPM) has launched an Investment Potential Map oriented towards sustainable development. In the Investment Potential Map there are 47 Investment Projects released which are categorized into 4 sectors, first the tourism sector with 12 projects, second economic areas with 14 projects, third manufacturing industry with 15 projects, and fourth infrastructure with 6 projects with a total investment value of IDR 155 .12 trillion spread across 33 provinces. These 47 projects are expected to have a direct impact on achieving 17 SDGs.

There are at least 5 (five) SDGs goals that are highly correlated with the Sustainable Investment Opportunity Map, including overcoming poverty; creating a healthy and prosperous life; creating decent jobs; and economic growth. The circular economy is an economic model that aims to generate economic growth by preserving the value of products, materials and resources for as long as possible. The ultimate goal of a circular economy is to minimize the social and environmental impacts caused by a linear economic approach. A circular economy focuses not only on better waste management through recycling practices, but also on resource efficiency that includes a series of interventions along the supply chain. The implementation of a circular economy can support the rate of economic growth without having to increase the extraction of natural resources with the potential to generate additional economic GDP of IDR 593–638 trillion in 2030. Apart from that, the circular economy can also bring social benefits in the form of the creation of 4.4 million net jobs in by 2030 with 75% of the total jobs being female workers. Looking at the environmental aspect, a circular economy can provide benefits in the form of reducing waste generation by 18-52% compared to the business-as-usual (BaU) approach without implementing a circular economy as well as reducing CO2e emissions by 126 million tons in 2030.

Currently, the direction of circular economy policy has been included in the National Medium Term Development Plan (RPJMN) 2020-2024, together with waste management being one of the priority sectors under the Low Carbon Development Priority Program (PRK) in National Priority 6: Building the Environment Life, Increasing Disaster Resilience, and Climate Change. Furthermore, in the National Long Term Development Plan (RPJPN) 2025 – 2045, the circular economy has also been integrated as one of the strategies for achieving a green economy for economic transformation in Indonesia. In line with this, the Indonesian Government is developing a Circular Economy Roadmap and Action Plan. This document contains actions that need to be taken by stakeholders, both government and industry, who are involved in the five priority sectors of the circular economy, namely the food and beverage sector, the retail sector, the textile sector, the construction sector and the electronics sector. The government is committed to implementing a circular economy under the umbrella of low-carbon development and a green economy as part of the national economic transformation strategy. Apart from increasing gross domestic product, implementing a circular economy also has the potential to provide positive benefits from a social and environmental perspective.Indonesia has a multitude of environmental problems that continually haunt our development, one of which is waste. The take – make – dispose linear economic model that we have adopted for the last few decades has now shown unpleasant consequences. In recent years, environmental and economic researchers have viewed this concept as no longer suitable and should be abandoned and switched to other concepts.

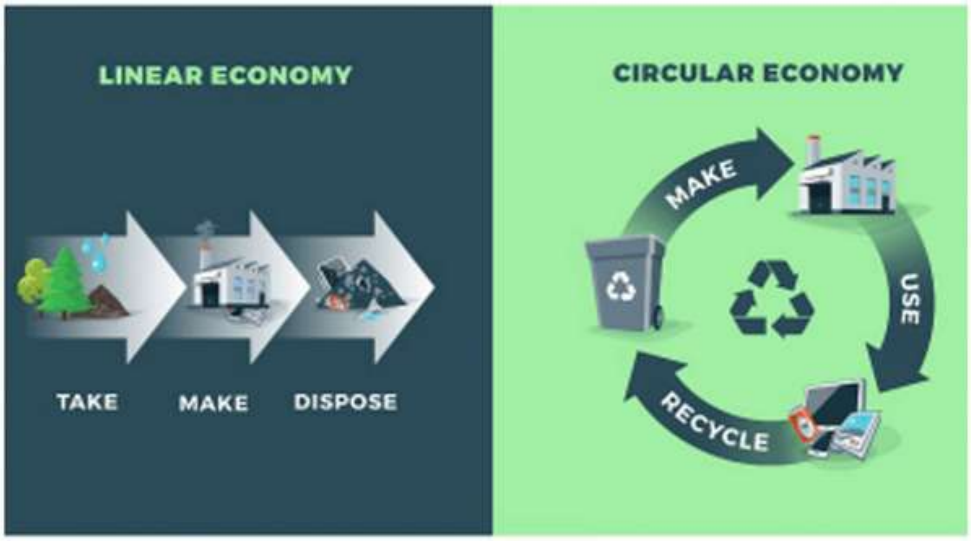

Figure 1.1
Circular Economy

Indonesia itself has implemented circular economy principles, marked by the holding of the third Indonesia Circular Economy Forum in November 2019 in Jakarta. Successful implementation of the circular economy concept can help create products and services using innovations that help maximize the efficiency of resource use. This is effectively expected to increase competitiveness, which can bring growth opportunities at the global level, worth USD 4.5 trillion by 2030. Apart from that, the circular economy can also help reduce carbon emissions, which will improve living conditions throughout the world and realizing the Paris Agreement and the UN Sustainable Development Goals. In a circular economy, there is no more waste. The main difference between a linear economy and a circular economy can be seen in the diagram above.

The circular economy can become a new normal. This unprecedented crisis is highlighting unsustainable environmental and social trends and causing a reconsideration of current production and consumption patterns, including mobility, material use and food. A circular economy can help overcome unsustainable trends and find adequate solutions towards an environmentally friendly recovery. In particular, cities and regions have a role to play in closing this cycle, reducing waste, reusing resources and restoring ecosystems, as well as implementing long-term recovery measures to create more resilient, sustainable and thriving communities. By reconfiguring material cycles, the circular economy provides an example of resilience in the face of future crises. People-centric cities can reduce private car use and regenerate green spaces. Organic waste can be converted into high quality fertilizer for local food production in rural areas. Buildings, made from traceable and recyclable materials, can absorb carbon dioxide, treat wastewater, and produce energy (Raworth, 2020). This requires a combination of natural and technological loops, incentives to create profitable projects and investments, conducive regulations and strong links with rural areas, to encourage a cultural shift towards a more resourceful and less wasteful society (Romano, 2020).

2. LITERATURE REVIEW

2.1 Green Economy

Green economy is a form of economy that not only focuses on meeting people's needs but also prioritizes its impact on the environment (Wu, et al., 2020). In (Loiseau, et al., 2016) it is explained that the green economy is an economic concept that has different implications from the economy in general because it prioritizes the future of natural resources, environmental welfare, and reducing the risk of using natural resources. The existence of this green economy can be used to spur innovation and investment in terms of realizing sustainable development (Kaszetal, 2017).

2.2 Blue Economy

Blue Economy is a sustainable economic idea that emphasizes supporting the maritime sector. The blue economy is a development idea that pays attention to environmental sustainability, especially those related to marine resources (Syifa Fajar Maulani, et.al 2022). Blue Economy is a concept of sustainable development that optimizes the management of marine resources to improve the social and economic welfare of society, as well as maintaining the sustainability of the marine environment (Putra, A., et al.., 2019).

2.3 Global Economy Development

The global economy refers to an economic system that involves interdependence and interaction between various countries around the world. Economic activities such as international trade, cross-border investment, and capital movements between countries are the main elements that shape global economic dynamics. Its scope includes the exchange of goods, services, and resources between countries, taking into account factors such as currency fluctuations, international trade policies, and financial market dynamics that impact economic well-being globally.

2.4 Circular Economy

Circular economy (circular economy). The Ellen Macarthur Foundation (2021) defines a circular economy as a system that can address global challenges such as climate change, loss of biodiversity, high levels of waste and pollution through economic activities with minimal waste and pollution, distribution of products and materials at their highest value, and natural regeneration. Meanwhile, according to Shirvanimoghaddam et.al. (2020), the circular economy is an alternative to the traditional economy where economic activities are carried out by preserving resources as long as possible, retaining their value when used, and reusing them to produce new products at the end of their useful life.

conceptual framework

According to (Notoatmodjo, 2018), a conceptual framework is a framework of relationships between concepts that will be measured or observed in a study. A conceptual framework must be able to show the relationship between the variables to be studied. The conceptual framework in this research can be described as below.

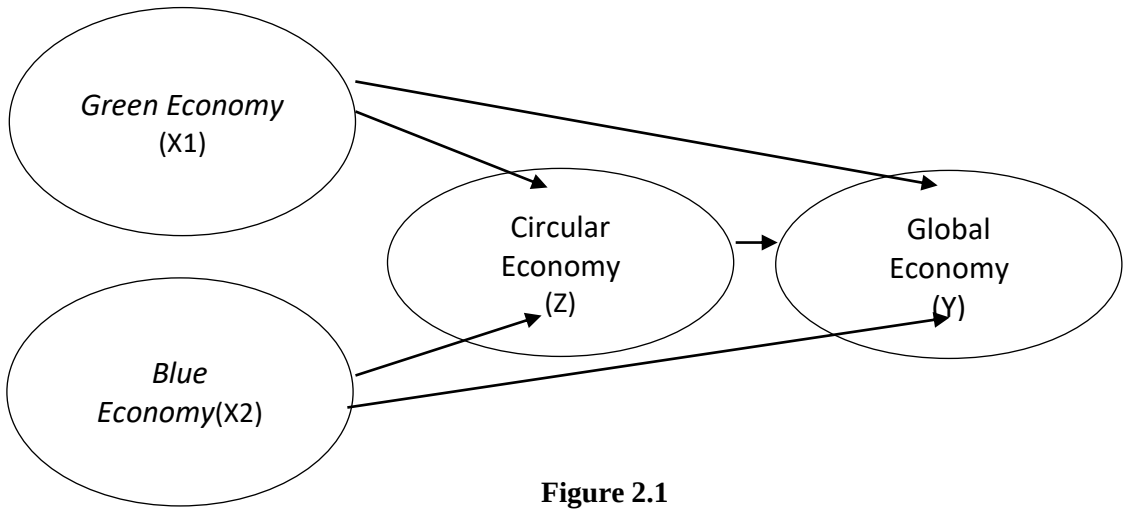

Figure 2.1
conceptual framework

3. RESEARCH METHODS

This research is quantitative research using a survey method. Creswell (2014) stated that quantitative research is an approach to testing objective theory by testing the relationship between variables. These variables, in turn, can be measured using instruments, so that quantity data can be analyzed using statistical procedures. The data collection method in this research, the researcher tries to find information related to this discussion in the form of facts, opinions and archival records. With this data collection method, it is hoped that the data needed for research purposes will be obtained. The data analysis technique in this research uses Partial Least Square (PLS). PLS is a Structural Equation Modeling (SEM) equation model with a variance-based approach or component-based structural equation modeling. According to Ghozali & Latan (2015), the aim of PLS-SEM is to develop theory or build theory (prediction orientation). PLS is used to explain whether there is a relationship between latent variables (prediction).

4. DISCUSSION

4.1 Evaluation of the Measurement Model (Outer Model)

The measurement model (outer model) is confirmatory factor analysis (CFA) by testing the validity and reliability of latent constructs. The following are the results of the outer model evaluation in this research.

4.2 Validity Test

This research uses assistance from Smart PLS 3.0 software. To test the validity of data, it can be used to test the validity of data. Convergent validity can be used to look at the loading factor value and discriminant validity by looking at the cross loading value.

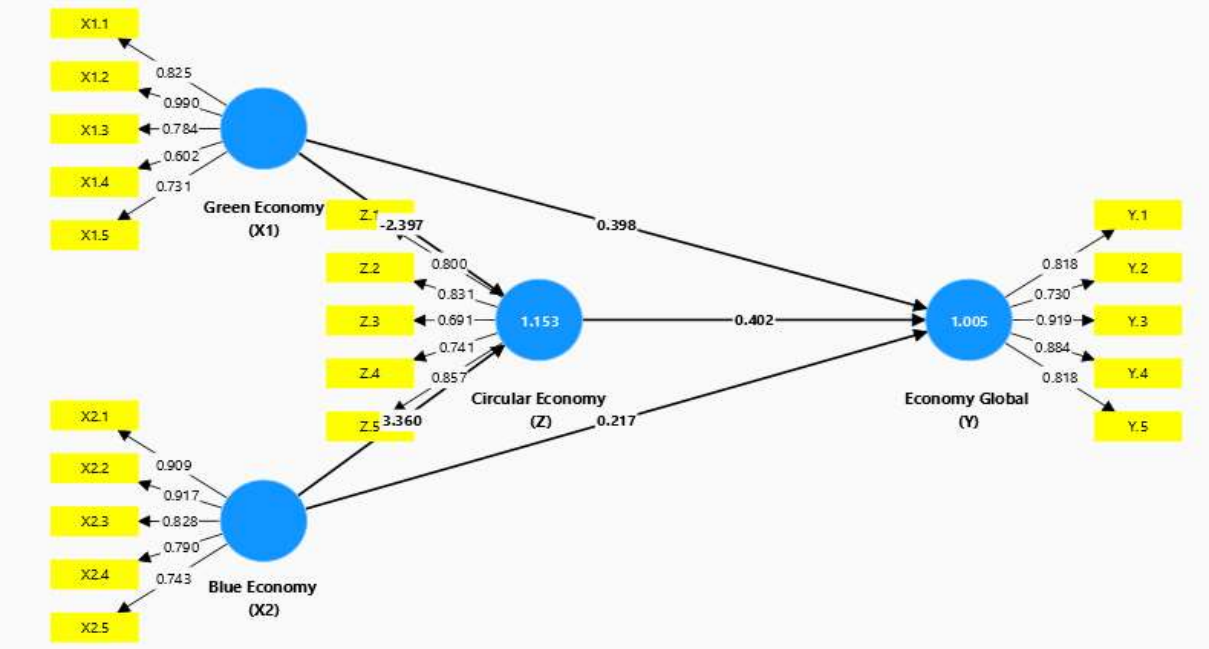

Figure 4.1. Outer Model

1. Convergent Validity
   Based on Figure 4.1 above, it can be seen that all loading factor values have exceeded the limit of 0.7, so it can be concluded that each indicator in this study is valid. Therefore, these indicators can be used to measure research variables.
2. Discriminant Validity
   Discriminant validity compares the Average Variance Extracted (AVE) value of each construct with the correlation between other constructs in the model. Based on Figure 4.1 above, it can be

seen that all cross loading values for each of the indicators targeted have a higher correlation with each variable compared to other variables. It can be concluded that the indicators above are valid as a whole.

4.3 Reliability Test

An instrument can be said to be reliable by looking at the value of Average Variance Extracted more than 0.5, Cronbach Alpha more than 0.6 and Composite Reliability more than 0.7.

Table 4.1 Calculation of AVE, Cronbach Alpha, and Composite Reliability

	Cronbach's Alpha	*rho_A*	*Composite Reliability*	*Average Variance Extracted (AVE)*
Economy Global (Y)	0.898	0.901	0.898	0.688
Circular Economy (Z)	0.839	0.854	0.843	0.577
Blue Economy (X2)	0.902	0.917	0.904	0.705
Green Economy (X1)	0.917	0.920	0.917	0.736

Source: Primary data processed (2024)

Based on Table 4.1 above, it can be seen that the Cronbach Alpha value of the Global Economy variable (Y) is 0.898, the Circular Economy variable (Z) is 0.839, the Green Economy variable (X1) is 0.917 and the Blue Economy variable (X2) is 0.902. From the results of the calculations above, it can be seen that all indicators are reliable in measuring the latent variables.

4.4 Evaluation of the Structural Model (Inner Model)

Evaluation of the inner model can be seen from several indicators which include the coefficient of determination (R2), Predictive Relevance (Q2) and Goodness of Fit Index (GoF) (Hussein, 2015).

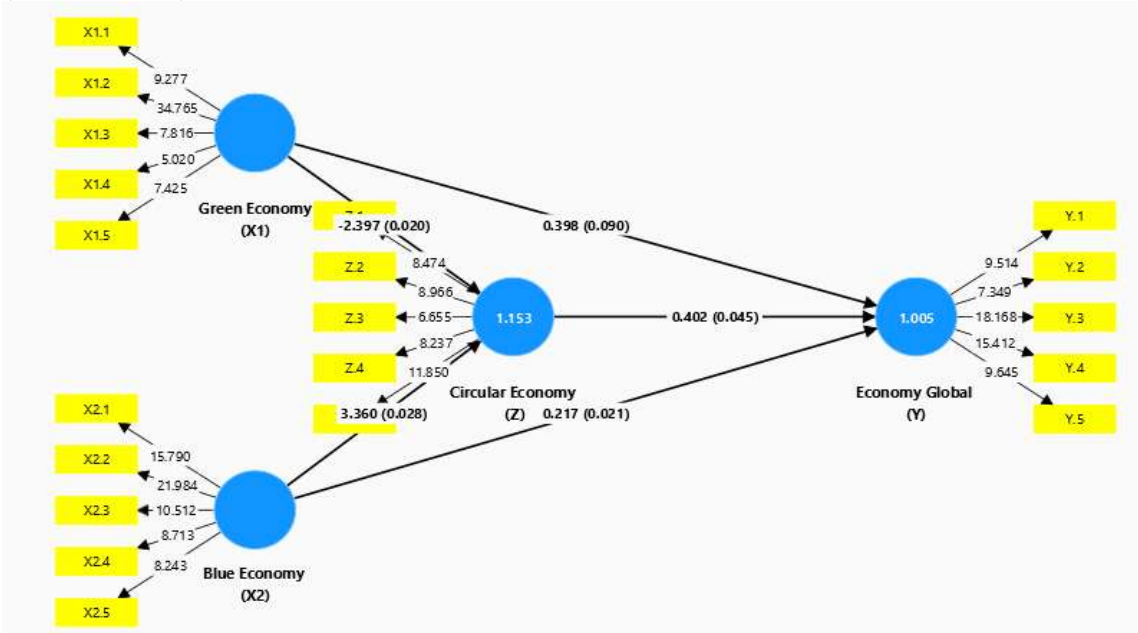

Figure 4.2 Structural Model (Inner Model)

4.5 R2 Results (R-square)

In assessing the model with PLS, start by looking at the R-square for each dependent latent variable. The results of the r2 calculation in this study are as follows:

Table 4.2
Correlation Value (r2)

	R-square	*Adjusted R-square*
Economy Global (Y)	0.782	0.762
Circular Economy (Z)	0.806	0.785

Based on the results of calculations using bootstapping in Table 4.14 above, it is known that the r2 value of the Circular Economy (Z) variable is 0.785, which means that the Circular Economy (Z) variable is influenced by the Green Economy variable (X1) and the Blue Economy variable (X2) is 78. 5% or in other words the contribution of the Green Economy variable (X1) and the Blue Economy variable (X2) is 78.5%. The r2 result of the Global Economy (Y) variable is 0.762, which means that the Global Economy (Y) variable is influenced by the Green Economy (X1) and the Blue Economy (X2) and Circular Economy (Z) variables by 76.2% or in other words the contribution the Green Economy variable (X1) and the Blue Economy (X2) and Circular Economy (Z) variables were 76.2%.

Goodness of Fit Model

Goodness of fit calculations can be used to determine the magnitude of the contribution made by exogenous variables to endogenous variables.

$$Q^2 = 1 - (1 - r12)\ (1 - r22)$$
$$Q2 = 1 - (1 - 0.762)\ (1 - 0.785)$$
$$Q2 = 0.9488$$

Based on the calculation above, the Q-square predictive relevance (Q2) value is 0.9488 or 94.88%. This is able to show that the diversity of the Global Economy variable (Y) can be explained by the model as a whole by 0.9488 or it can also be interpreted that the contribution of the Green Economy variable (X1) and the Blue Economy variable (X2) and Circular Economy (Z) to the Economy variable Global (Y) as a whole is 94.88%, while the remaining 5.12% is the contribution of variables not discussed in this study

4.6 Hypothesis Testing

Based on the results of the outer model carried out, all the hypotheses tested have met the requirements, so they can be used as analysis models in this research. Hypothesis testing in this study uses an alpha of 5%, which means that the t-statistic value is ≥ 2.048 or the probability value is ≤ level of significance (α = 5%). The limit of 0.05 means that the probability of deviation is only 5% and the remaining 95% is indicated as being able to accept the hypothesis.

Table 4.3
Path Coefficients

	Original Sample (O)	*Sample Mean (M)*	*Standard Deviation (STDEV)*	*Q statistics (|O/STDEV|)*	*P Values*
Circular Economy (Z) -> Global Economy (Y)	1,352	0.390	0.381	2,972	0,000
Blue Economy (X2) -> Global Economy (Y)	1,075	1,234	0.921	2,993	0.002
Blue Economy (X2) -> Circular Economy (Z)	0.791	0.406	0.651	0.990	0.493
Green Economy (X1) -> Global Economy (Y)	0.124	0.279	0.119	3,999	0,000
Green Economy (X1) -> Circular Economy (Z)	0.232	0.617	0.567	2,997	0.001

Source: Primary data processed (2024)

Based on Table 4.3, the test results for each hypothesis are as follows:

a. Green Economy (X1) influences Circular Economy (Z)
   Based on the test results in Table 4.3, it can be seen that the t-statistical value of the relationship between the Green Economy variable (X1) and the Circular Economy variable (Z) is 2.997 with sig. equal to 0.001. The test results show that the t-statistic ≤ 1.96 and the sig value. ≥ level of significance (α = 5%). Thus, the first hypothesis is accepted that Green Economy (X1) influences Circular Economy (Z).
b. Blue Economy (X2) influences Circular Economy (Z)
   Based on the test results in Table 4.3, it can be seen that the t-statistical value of the relationship between the Blue Economy variable (X2) and the Circular Economy variable (Z) is 0.990 with sig. of 0.493. The test results show that the t-statistic ≤ 1.96 and the sig. ≥ level of significance (α = 5%). Thus the second hypothesis is rejected, namely that the Blue Economy (X2) has no effect on the Circular Economy (Z).
c. Green Economy (X1) influences the Global Economy (Y)
   Based on the test results in Table 4.3, it can be seen that the t-statistical value of the relationship between the Green Economy variable (X1) and the Global Economy variable (Y) is 3.999 with sig. equal to 0.000. The test results show that the t-statistic ≤ 1.96 and the sig value. ≥ level of significance (α = 5%). Thus the third hypothesis is accepted that the Green Economy (X1) influences the Global Economy (Y).
d. Blue Economy (X2) influences Global Economy (Y)
   Based on the test results in Table 4.3, it can be seen that the t-statistical value of the relationship between the Blue Economy variable (X2) and the Global Economy variable (Y) is 2.993 with sig. equal to 0.002. The test results show that the t-statistic ≤ 1.96 and the sig value. ≥ level of significance (α = 5%). Thus the fourth hypothesis is accepted that the Blue Economy (X2) influences the Global Economy (Y).
e. Circular Economy (Z) influences Global Economy (Y)
   Based on the test results in Table 4.3, it can be seen that the t-statistical value of the relationship between the Circular Economy variable (Z) and the Global Economy variable (Y) is 2.972 with sig. equal to 0.000. The test results show that the t-statistic ≤ 1.96 and the sig value. ≥ level of significance (α = 5%). Thus the fifth hypothesis is accepted that Circular Economy (Z) has an influence on Global Economy (Y).

The indirect influence test is carried out by testing the strength of the indirect influence of the independent variable (variable An indirect influence can be declared significant if both direct influences that form it are significant. The results of this test can be seen in the following table:

Table 4.4. Indirect Effects

	Original Sample (O)	*Sample Mean (M)*	*Standard Deviation (STDEV)*	*Q statistics (|O/STDEV|)*	*P Values*
Green Economy (X1) -> Circular Economy (Z) -> Economy Global (Y)	0.570	0.468	0.930	2,194	0.002
Blue Economy (X2) -> Circular Economy (Z) -> Economy Global (Y)	0.314	0.872	0.868	2,983	0,000

a. Green Economy (X1) has a significant influence on Global Economy (Y) through Circular Economy (Z). Based on the test results in Table 4.4, it can be seen that the t-statistical value of the relationship between the Green Economy variable (X1) and the Global Economy

variable (Y) through the Circular Economy variable (Z) is 2.194 with sig. of 0.002. The test results show that the t-statistic is ≥ 1.96 and the sig value. ≤ level of significance (α = 5%). Thus, the sixth hypothesis is accepted that Green Economy (X1) has a significant effect on Global Economy (Y). through Circular Economy (Z).

b. Blue Economy (X2) has a significant influence on Global Economy (Y) through Circular Economy (Z). Based on the test results in Table 4.4, it can be seen that the t-statistic value of the relationship between the Blue Economy variable (X2) and the Global Economy variable (Y) through the Circular Economy variable (Z) is 2.983 with sig. equal to 0.000. The test results show that the t-statistic is ≥ 1.96 and the sig value. ≤ level of significance (α = 5%). Thus, the seventh hypothesis is accepted. Blue Economy (X2) has a significant effect on Global Economy (Y) through Circular Economy (Z).

5. CONCLUSION

Based on the results of the research and discussion in the previous chapter, it can be concluded as follows:

1. The first hypothesis is accepted that Green Economy (X1) influences Circular Economy (Z).
2. The second hypothesis is rejected that the Blue Economy (X2) has no effect on the Circular Economy (Z).
3. The third hypothesis is accepted that the Green Economy (X1) influences the Global Economy (Y).
4. The fourth hypothesis is accepted that the Blue Economy (X2) influences the Global Economy (Y).
5. The fifth hypothesis is accepted that Circular Economy (Z) influences Global Economy (Y).
6. The sixth hypothesis is accepted that Green Economy (X1) has a significant effect on Global Economy (Y) through Circular Economy (Z).
7. The seventh hypothesis is accepted. Blue Economy (X2) has a significant effect on Global Economy (Y) through Circular Economy (Z).

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